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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,806	09/12/2003	Andrew Wilson	0074-456205.1	7381

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EXAMINER

VALENTIN, JUAN D

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,806

Applicant(s)

WILSON ET AL.

(Signature)

Examiner

Juan D. Valentin II

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/12/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3-4, 7, 10-13, & 16 rejected under 35 U.S.C. 102(b) as being anticipated by Lukosz (USPN '131).

Claim 1 & 4

Lukosz in conjunction with Fig. 6, discloses a light source (6), a photo detector (10), gas cell (col. 5, lines 15-20 and col. 8, lines 27-30) containing a gas through which gas passes and through which light from the light source passes and is reflected back to the photo detector by a reflector 5 (claim 4) (see fig. 6, col. 9, lines 42-60). Lukosz even provides an embodiment that uses a polarization preserving monomode fiber (col. 9, line 62-col. 10, line 2). It would have been obvious to one having ordinary skill in the art at the time of invention to include a polarization preserving monomode fiber to minimize light loss and to maintain the polarization of the return light.

Claim 2

Lukosz as applied above discloses it would have been obvious to one having ordinary skill in the art at the time of invention the return light is polarized orthogonal to the transmitted light (col. 12, lines 35-40).

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Claim 3

Lukosz as applied above further discloses means (beam splitter, ref. 9) between the light source 6 and the optical fiber arranged to split the returned light from the transmitted light and direct the returned light to the photo detector 10 (col. 9, lines 42-61).

Claim 7

Lukosz as applied above further discloses wherein the light source 6 and photo detector 10 are positioned remotely to the gas cell (see Fig. 6).

Claims 10-13, 16, & 20

The method is taught by the functions shown with regards to the apparatus claims 1-4, 7, & 19 as rejected above in view of Lukosz.

Claim 19

Lukosz as applied above further discloses wherein the light source and phot detector are positioned remotely to the gas cell (see Fig. 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5, 6, 9, 14, & 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Lukosz in view of King et al. (USPN '610, hereinafter King).

Claims 5 & 9

Lukosz in conjunction with Fig. 6, discloses a light source (6), a photo detector (10), gas cell (col. 5, lines 15-20 and col. 8, lines 27-30) containing a gas through which gas passes and through which light from the light source passes and is reflected back to the photo detector by a reflector 5 (claim 4) (see fig. 6, col. 9, lines 42-60). Lukosz even provides an embodiment that uses a polarization preserving monomode fiber (col. 9, line 62-col. 10, line 2). It would have been obvious to one having ordinary skill in the art at the time of invention to include a polarization preserving monomode fiber to minimize light loss and to maintain the polarization of the return light.

Lukosz substantially teaches the claimed invention except that it fails to show wherein the gas cell comprises a resonant optical cavity. King shows that it is known to provide wherein the gas cell comprises a resonant optical cavity (Fig. 3, col. 11, lines 5-16 & lines 33-66) for an chemical sensor. It would have been obvious to someone of ordinary skill in the art to combine the device of Lukosz with the resonant cavity gas cell of King for the purposes of providing relatively lossless reflection over the entire spectrum of the laser emission (King, col. 13, lines 29-39).

Claim 6

Lukosz in view of King disclose means to sense gas via the cavity ring down time of the gas in the resonant cavity. It is the position of the Office that the structural limitations of claim 6 have been met as applied above in view of Lukosz in view King. Applicants original disclosure does not disclose any critically distinguishing structural feature which allows for a means to

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sense gas via cavity ring down, therefore it is the position of the Office that Lukosz in view of King comprises a means to sense gas via cavity ringdown.

Claims 14 & 18

The method is taught by the functions shown with regards to the apparatus claims 5 & 9 as rejected above in view of Lukosz.

3. Claims 1, 3-4, 7, 8, 10-13, & 16, 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (USPN '255).

Claims 1, 4, & 8

Watanabe in conjunction with Fig. 5, discloses a light source 21, a photo detector 29, gas cell (pressure sensor) 27 (col. 5, lines 7-26) containing a gas through which gas passes and a polarizer 26 through which light passes through after exiting the gas cell and re-entering the optical fiber and is reflected back to the photo detector by a reflector 22 (claim 4) (col. 3, lines 1-40 & col. 4, line 53-col. 5, line 32). Watanabe fails to disclose the particular type of optical fiber used, specifically polarization preserving fiber. Official notice taken. It is the position of the Office that it would have been obvious to one having ordinary skill in the art at the time of invention to include a polarization preserving monomode fiber to minimize light loss and to maintain the polarization of the returned light from the pressure sensor 27.

Claim 2

Watanabe as applied above discloses it would have been obvious to one having ordinary skill in the art at the time of invention the return light is polarized orthogonal to the transmitted light (ref. 26, col. 3, lines 13-40).

Claim 3

Watanabe as applied above further discloses means (beam splitter, Fig. 5, ref. 22 between the light source 6 and the optical fiber arranged to split the returned light from the transmitted light and direct the returned light to the photo detector 10 (col. 9, lines 42-61).

Claim 7

Watanabe as applied above further discloses wherein the light source 21 and photo detector 29 are positioned remotely to the gas cell (see Fig. 5).

Claims 10-13, 16, , 17, & 20

The method is taught by the functions shown with regards to the apparatus claims 1-4, 7, 8, & 19 as rejected above in view of Lukosz.

Claim 19

Watanabe as applied above further discloses wherein the light source and photo detector are positioned remotely to the gas cell (see Fig. 5).

Allowable Subject Matter

4. Claim 15 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 15, the prior art fails to disclose or make obvious “a method including sensing the gas via the cavity ring-down time of the gas in the resonant cavity” and in combination with the other recited limitations of claim 15.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

"Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge when they are made by the Board of Patent Appeals and Interferences. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well-known statement in the next reply after the Office action in which the well known statement was made."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan D. Valentin II whose telephone number is (571) 272-2433. The examiner can normally be reached on Mon.-Fri..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Juan D Valentin II
Examiner 2877
JDV
March 3, 2006



LAYLA G. LAUCHMAN
PRIMARY EXAMINER